

**REMARKS**

This request for reconsideration is filed in response to the Office Action dated May 18, 2007. This application should be allowed and the case passed to issue.

Claims 1-24 are pending in this application. Claims 11-24 were withdrawn pursuant to a restriction requirement. Claims 1-10 have been rejected.

***Election of Species***

Applicants respectfully request rejoinder and examination of the claims of Species (b) (claims 11-19) upon the allowance of a claim from Species (a).

***Claim Rejections Under 35 U.S.C. § 103***

Claims 1-10 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Shimizu et al. (U.S. Pat. Pub. No. 2002/0160232) in view of Chou et al. (U.S. Pat. No. 5,019,210). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the invention, as claimed, and the cited prior art.

An aspect of the invention, per claim 1, is a method of manufacturing granular perpendicular magnetic recording media comprising sequential steps of providing a non-magnetic substrate including a surface. A layer stack is formed on the surface of the substrate. The layer stack includes a granular perpendicular magnetic recording layer having an exposed upper surface. A plasma is generated containing at least one ionized oxygen species derived from a source gas comprised of a compound of oxygen and at least one other non-metallic element. The exposed upper surface of the granular perpendicular magnetic recording layer is treated with the plasma to form an oxidized surface layer.

The Examiner asserted that Shimizu et al. disclose a method of manufacturing granular perpendicular magnetic recording material. The Examiner acknowledged that Shimizu et al. do

not disclose the plasma containing at least one oxygen species derived from a source gas comprised of a compound of oxygen and at least one other non-metallic element. The Examiner asserted that Chou et al. (col. 4, lines 2-16) disclose oxygen plasma reaction and that it would have been obvious to include such because of the advantages taught by Chou et al. (col. 3, lines 3-10).

Contrary to the Examiner's assertion, it would not have been obvious to one of ordinary skill in this art to combine Shimizu et al. with Chou et al. to obtain the claimed method. Shimizu et al. is directed to depositing an oxidized surface layer on a magnetic film, while Chou et al. is directed to plasma treating the surface of a polymer body to enhance the adhesion of a first and second polymer surface. Thus, Shimizu et al. and Chou et al. are directed to non-analogous arts. One of skill in the art looking to solve a problem involving deposition of an oxide surface layer on a magnetic film would not look towards the teaching of Chou et al. involving improving adhesion of polymer surfaces.

The present claims are further distinguishable over Shimizu et al. and Chou et al. because even if it would have been obvious to combine Shimizu et al. and Chou et al., and Applicants maintain that it is not obvious, the resulting combination would not produce the claimed method. Step (c) of the claimed method requires generating a plasma containing at least **one ionized oxygen species** derived from a source gas comprised of a compound of oxygen and at least one other non-metallic element. Chou et al. teach the use of water vapor plasma. As disclosed by Chou et al. (col. 4, lines 3-9), "[g]eneration of a water vapor plasma is commonly known in the art. A plasma is typically generated by providing a gas between an anode and a cathode between which an RF field is provided. An RF field causes the dissociation of the gas into charged particles. In a water vapor plasma water molecules may be dissociated into **hydroxyl ions and**

protons." As is well-known in this art, neither hydroxyl ions (OH<sup>-</sup>) nor protons (H<sup>+</sup>) are ionized oxygen species (e.g. - O<sup>-</sup>), as required by claim 1. Because the process of Chou et al. does not produce ionized oxygen species, the combination of Chou et al. with Shimizu et al. can not produce the claimed method.

Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Fine*, F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). There is no suggestion in Chou et al. to modify the Shimizu et al. method of manufacturing a magnetic recording medium to generate a plasma containing at least one ionized oxygen species derived from a source gas comprised of a compound of oxygen and at least one other non-metallic element and treating the exposed upper surface of the granular perpendicular magnetic recording layer with the plasma to form an oxidized surface layer, as required by claim 1, nor does common sense dictate the Examiner-asserted modification. The Examiner has not provided any evidence that there would be any obvious benefit in making the asserted modification of Shimizu et al. See *KSR Int'l Co. v. Teleflex, Inc.*, 500 U.S. \_\_\_\_ (No. 04-1350, April 30, 2007) at 20.

#### ***Obviousness Double Patenting***

Claims 1-4, 8, and 13 are rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over claim 15 of U.S. Pat. No. 7,081,268 (the '268 patent) in view of Chou et al. This rejection is traversed, and reconsideration and withdrawal respectfully requested.

The claims of the present application are not obvious in view of claim 15 of the '268 patent and Chou et al. Claim 1 of the instant application requires generating a plasma containing at least one ionized oxygen species derived from a source gas comprised of a compound of oxygen and at least one other non-metallic element and treating the exposed upper surface of the granular perpendicular magnetic recording layer with the plasma to form an oxidized surface layer. Claim 15 of the '268 patent requires treating the surface of the magnetic recording layer with **oxygen gas** at a sub-atmospheric pressure. The ionized oxygen species derived from a source gas comprised of a compound of oxygen is not obvious in view of oxygen gas at sub-atmospheric pressure. Oxygen gas is different from ionized oxygen species and has different properties and effects. There is no suggestion in claim 15 of the '268 patent to treat the surface of the magnetic recording layer with an **ionized oxygen species**, as required by claim 1 of the present invention.

Chou et al. do not cure the deficiencies of the '268 patent because the '268 patent is directed to a method of manufacturing a magnetic recording medium, while Chou et al. is directed to plasma treating the surface of a polymer body to enhance the adhesion of a first and second polymer surface. Thus, the '268 patent and Chou et al. are directed to non-analogous arts. One of skill in the art looking to solve a problem involving deposition of an oxide surface layer on a magnetic film would not look towards the teaching of Chou et al. involving improving adhesion of polymer surfaces.

In response to the Examiner's query on page 4 of the Office Action, the '268 patent is not available as prior art under 35 U.S.C. § 103(c). The instant application and the '268 patent were, at the time the instant invention was made, owned by the same person (Seagate Technology LLC) or subject to an obligation of assignment to the same person. Ergo, by virtue of 35 U.S.C.

§103(c), the '268 patent may not be relied upon to support a rejection under 35 U.S.C. §103.

(See MPEP § 706.02(I)(2)(II)).

In view of the above remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding these remarks or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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